REMARKS/ARGUMENTS

Claims 1, 2, 6 and 7 are pending herein. Claims 3-5 have been cancelled without prejudice or disclaimer. Claims 1 and 6 have been amended for clarification purposes only.

1. Applicants hereby affirm the provisional election to prosecute claims 1, 2, 6 and 7 in the present application. The non-elected claims have been cancelled without prejudice or disclaimer. Applicants presently intend to file a divisional application for the non-elected claims, and thus reserve the right under 35 U.S.C.§121.

2. The objection to claims 1 and 6 are noted, but deemed moot in view of the rewritten claims submitted above.

3. Claims 1, 2, 6 and 7 were rejected under 35 U.S.C.§102(e) over Mishra et al. This rejection is respectfully traversed.

Pending independent claims 1 and 6 each recite, among other things, that an AlN film is formed on a C-faced sapphire single crystal base material and has a crystallinity of 90 arcsec or below in full width at half maximum (FWHM) of X-ray rocking curve. The AlN also has a surface flatness of 20Å or below. The applied prior art of record, discussed below, does not disclose or suggest an AlN film having a combination of the claimed FWHM X-ray rocking curve and surface flatness values.

Fig. 1 of Mishra shows a semiconductor device that includes a Group III nitride layer 104 on a substrate 110. Mishra discloses that the Group III nitride layer can be either a GaN layer or an AlN layer and that substrate 110 can be a C-plane sapphire substrate. Mishra's disclosed FWHM crystallinity values, however, pertain only to GaN layers formed on Si or sapphire substrates. This is clearly illustrated by Figs. 3-5 of Mishra. Pending claims 1 and 6, on the other hand, recite an AlN film having a FWHM crystallinity value of 90 arcsec or below. Notwithstanding that column 6 of Mishra apparently discloses that AlN can be substituted for GaN in layer 104, there is no disclosure in Mishra of any FWHM crystallinity values for an AlN layer. Again, Mishra's disclosed FWHM values pertain only to GaN films formed on Si and sapphire substrates, and not for AlN films formed on a sapphire substrate, as claimed. There is no teaching in Mishra that would lead one skilled in the art to believe that Mishra's disclosed FWHM crystallinity values are interchangeable for GaN and AlN materials. This rejection should be withdrawn for this reason alone.

Moreover, Mishra does not disclose a FWHM crystallinity value below 300 for any semiconductor film layer (GaN or otherwise) that is formed on a sapphire substrate, let alone a FWHM cyrstallinity value of 90 arcsec or below ***for an AlN film formed on a sapphire***

substrate, as claimed. The present specification makes clear that "if the FWHMs of AlN films are set beyond 90 arcsec, the resulting substrates having their respective AlN films are not usable as substrates for acoustic surface wave devices" (see original specification page 5, paragraph [0019], lines 16-18). Even if Mishra's FWHM crystallinity values were construed to be applicable to AlN films, each and every element recited in pending claims 1 and 6 would still not be satisfied by Mishra.

Furthermore, there is no disclosure in Mishra pertaining to the surface flatness of any semiconductor film layer, let alone that an AlN film (having the claimed FWHM crystallinity value) has a "surface flatness of 20Å or below," as recited in pending independent claims 1 and 6. This claimed structural feature is simply not disclosed in Mishra.

In view of all of the foregoing, reconsideration and withdrawal of the §102(e) rejection over Mishra are respectfully requested.

If the Examiner believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, the Examiner is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

February 2, 2004
Date

Stephen P. Burr
Reg. No. 32,970

SPB:SWC:jms

BURR & BROWN
P.O. Box 7068
Syracuse, NY 13261-7068

Customer No.: 025191
Telephone: (315) 233-8300
Facsimile: (315) 233-8320